PROGRAM STATUS AND PROGRESS

"*What we do counts, because we are a large organization with a big job, an enormous appetite, and a potentially huge impact on the environment. So every environmental action we take adds up to a cleaner, better world.*"
—William S. Cohen, Secretary of Defense

Beginning in FY97, the DERP's planning, programming, and budgeting were devolved from the Office of the Secretary of Defense (OSD) to the Components. Devolvement of the program's funding was intended to increase the consistency, stability, and accountability of the program by requiring environmental restoration needs to compete for resources with other mission requirements. The DERP's post-devolvement structure is based on accepted management systems and practices. Performance goals for the DERP are provided in the Defense Planning Guidance (DPG). In general these goals include reducing risk to human health at sites, making property at BRAC bases environmentally suitable for transfer, and having final Remedies in Place. The specific DPG goals for the IR program are to have final Remedies in Place or to achieve Response Complete status for:

- 50 percent of high-relative-risk sites by the end of FY02
- All high-relative-risk sites by FY07
- All medium-relative-risk sites by FY11
- All low-relative-risk sites by FY14.

(More information on relative risk reduction is presented in the MOM 1: Relative Risk Reduction section, page 13.)

The specific DPG goals for the BRAC program are:

- 75 percent of the acres in Categories 5, 6, and 7 suitable for transfer by FY01 and 100 percent of this acreage suitable for transfer by FY05
- 75 percent of installations RIP or RC by FY01 and 100 percent RIP or RC by FY05
- 90 percent of sites RIP or RC by FY01.

(For more information on the BRAC categories refer to Appendix D.)

OSD provides continuing guidance on meeting these goals, and DoD Components plan the program and budget resources with the goals in mind. OSD oversees the DERP through several mechanisms established to gauge progress toward the DPG goals. These mechanisms include data collection and evaluation of performance metrics, or measures of merit (MOM). In the past year OSD has sharpened its focus on oversight, policy development, and coordination in response to the new post-devolvement model of five accounts under one program.

This section describes how cleanup program activities were coordinated with FY97 program funding and how DoD measures program effectiveness. It begins with a discussion of the measures of merit, which include relative risk reduction, phase progress at sites, milestones, and Remedies in Place or Response Complete

status at DoD installations and FUDS properties. A second discussion concerns program funding, which includes the budget process, DERP funding, devolvement, ER account status, and BRAC status.

Measures of Merit

MOMs are the primary tool for measuring and reporting progress toward DPG goals. As performance metrics, they provide a consistent benchmark for reporting on and evaluating the program, as well as information for use in adjusting budget projections and program requirements. DERP MOMs fall into four separate categories:

- MOM 1: DERA and BRAC relative risk reduction
- MOM 2: DERA and BRAC phase progress
- MOM 3: DERA and BRAC milestones
- MOM 4: DERA and BRAC RIP/RC.

The Components have made great strides in adopting and applying the DPG goals and MOMs in their implementation of the DERP. Initially, it was difficult to obtain even rough projections about achievement of milestones. Each Component is now fully focused on achieving the DPG goals.

The following sections discuss and display the DERP's FY97 status for each measure of merit. The integrity of inventory management, performance measures, and reporting is essential to an accurate evaluation of the program. OSD has issued guidance on the minimum requirements for information management systems and data collection and continues to emphasize the importance of maintaining a consistent, credible record of past activities and performance.

MOM 1: Relative Risk Reduction

DoD has adopted a risk management strategy to ensure that higher risk sites are addressed first and receive the funding they need for implementing the cleanup process. Relative risk evaluation separates sites into high, medium, and low relative-risk categories (as shown in Tables 2 and 3 and Figures 3 and 4).

The reduction over time in the number of sites in each relative risk site evaluation category is used on a programmatic level as an indicator of overall risk reduction achieved and progress toward the program risk reduction goals. Relative risk provides a common, consistent framework for site cleanup. Combined with other factors, it helps DoD determine the sequence in which sites will be addressed and helps DoD identify the sites where cleanup is most urgently needed so that resources can be focused on those sites first.

All DoD sites on operational and BRAC installations and certain sites on FUDS properties are required to perform Relative Risk Site Evaluations. Sites are exempted from this requirement if they exclusively address BD/DR, unexploded ordnance (UXO), or potentially responsible party (PRP) requirements or if they are classified as having all Remedies in Place, as being Response Complete, or as lacking sufficient information for evaluation.

DoD Relative Risk Site Evaluation Primer at ***http://www.dtic.mil/envirodod/relrisk/relrisk.html*** Provides information on the Relative Risk Site Evaluation framework that DoD uses and presents instructions on conducting relative risk evaluations

Table 2
End of FY97 ER Relative Risk Site Evaluation Status

		DoD Component*						
		Army	Navy	Air Force	DLA	DSWA	FUDS	ER Total
Sites with Response Complete		7,556	1,450	2,176	272	2	1,628	13,084
Relative Risk of Sites in Progress	High	1,147	863	781	25	0	224	3,040
	Medium	553	435	416	6	0	94	1,504
	Low	757	469	417	13	0	42	1,698
	Not Evaluated	143	173	209	27	26	895	1,473
	Not Required**	72	60	298	12	8	1,245	1,695
Total Number of Sites		**10,228**	**3,450**	**4,297**	**355**	**36**	**4,128**	**22,494**

* Including FUDS

** Sites that have Remedy in Place, Response Complete, or no-further-action-required designations do not require relative risk evaluation, because DoD has committed to funding Remedial Action Operations and LTM requirements at these sites. In addition, Relative Risk Site Evaluations are not required at sites that exclusively address unexploded ordnance (UXO), BD/DR, or PRP requirements.

Table 3
End of FY97 BRAC Relative Risk Site Evaluation Status

		DoD Component				
		Army	Navy	Air Force	DLA	BRAC Total
Sites with Response Complete		898	403	785	95	2,181
Relative Risk of Sites in Progress	High	196	247	145	27	615
	Medium	153	173	99	29	454
	Low	206	112	114	31	463
	Not Evaluated	695	60	222	106	1,083
	Not Required*	12	3	146	3	164
Total Number of Sites		**2,160**	**998**	**1,511**	**291**	**4,960**

* Sites that have Remedy in Place, Response Complete, or no-further-action-required designations do not require relative risk evaluation, because DoD has committed to funding Remedial Action Operations and LTM requirements at these sites. In addition, Relative Risk Site Evaluations are not required at sites that exclusively address unexploded ordnance (UXO), BD/DR, or PRP requirements.

Figure 3
Relative Risk Ranking of Sites Planned for Cleanup Funding from FY98 through FY03 (%)

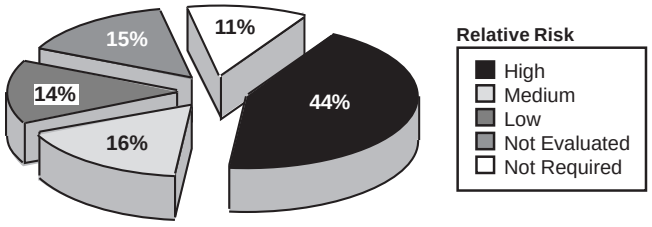
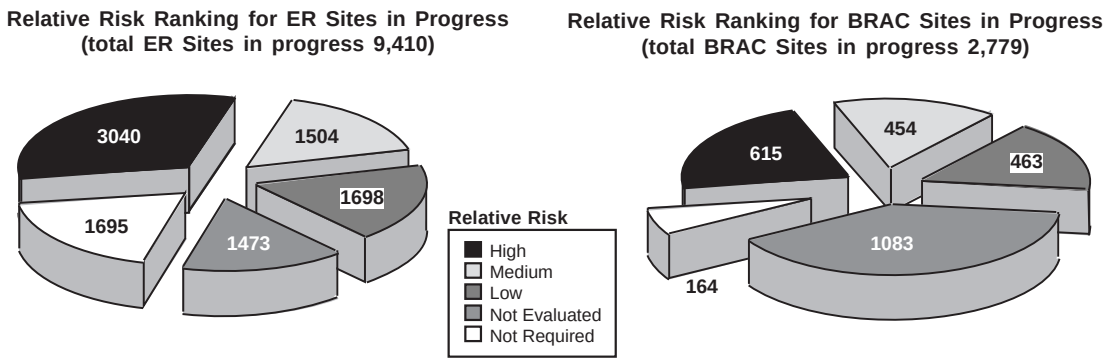


Figure 4



MOM 2: Phase Progress

Accurate measurement of progress, identification of issues, and analysis of trends are critical to successful, cost-effective program implementation and to reliable planning, programming, budgeting, and oversight.

OSD and the Components carefully track the number of sites in each phase of the cleanup process. A site is considered to be in the investigation phase until the investigation is completed, regardless of whether an Interim Action has been implemented. By looking at the number of sites in the investigation, cleanup, and Response Complete phases at the end of each fiscal year, one can see the program's progress toward Response Complete and ultimately Site Closeout. Figure 5 displays the status of all DoD's operational and BRAC installations, and Figure 6 shows the status of all FUDS properties, as of September 30, 1997. For definitions of the terms used in Figures 5 and 6, refer to the Glossary in Appendix E.

MOM 3: Milestones

In this MOM, sites with actions accomplished are counted. An installation or property is considered Response Complete when every contaminated site at the installation has been investigated and all necessary responses are complete. Because a single DoD installation can have many sites, it is necessary to measure completed cleanup steps at each site in order to show overall cleanup progress. DoD counts the following accomplishments: the number of sites that are only in the investigation phase, the number of sites that have implemented an Interim Action, the number of sites that have Remedies in Place, and the number of sites in the Response Complete category.

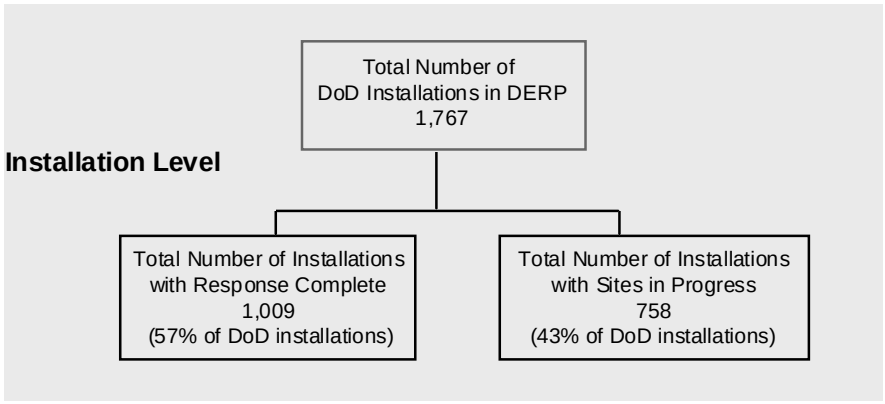
Actions Completed

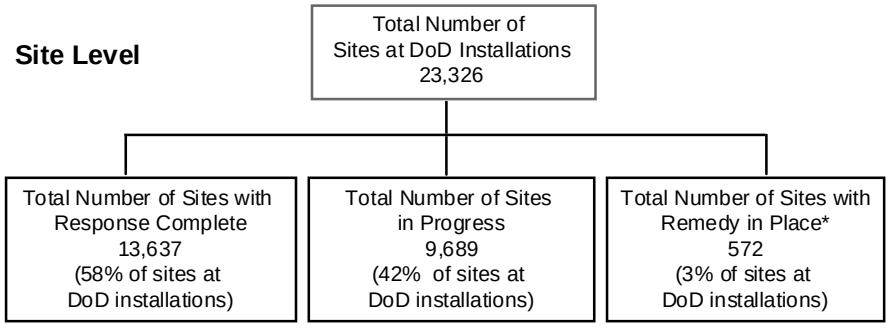
Accelerating environmental cleanup and reducing risk are high priorities in the Environmental Restoration Program. As of September 30, 1997:

- 4,163 Interim Actions had been completed at 3,285 sites (overall cleanup program).
- 2,997 Interim Actions had been completed at 2,335 operational installation sites and FUDS properties.
- 1,166 Interim Actions had been completed at 950 BRAC sites.

Figure 7 shows the number of Interim Actions completed through FY97 for ER (operational installations and FUDS) and BRAC sites.

Figure 5
FY97 Status of DoD Operational and BRAC Installations





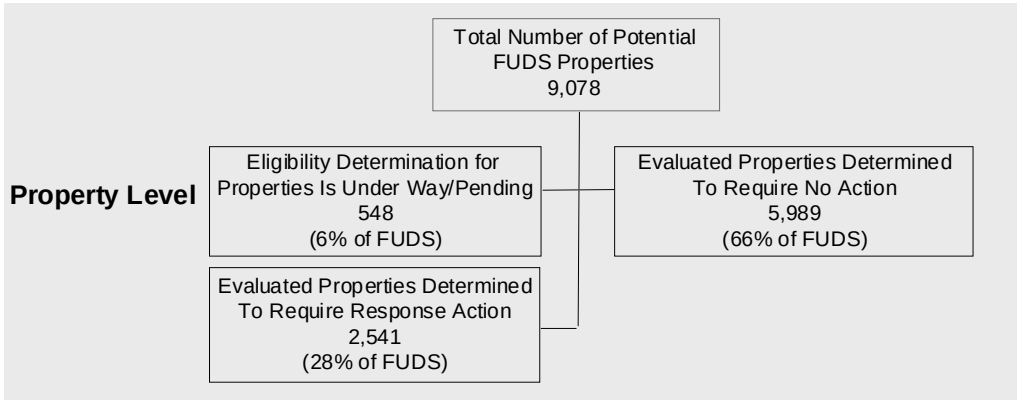
Phase Level

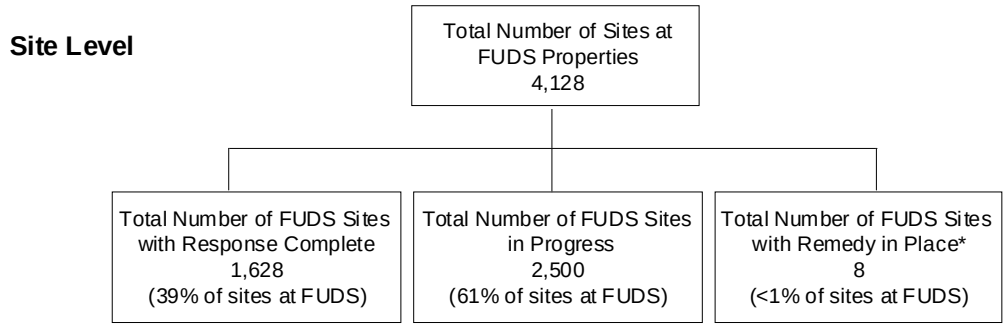
Phase Activities at DoD Operational and BRAC Installations

Phase	Completed	Under Way	Future
	Sites (# of Actions)		
Investigation	16,518	6,379	429
Interim Action**	3,172 (4,050)	1,135 (1,355)	
Design	1,752	539	4,525
RA-C	1,982	713	5,201
RA-O	89	350	2,595
LTM	101	868	4,115

* RIP is a subset of Sites in Progress
** Interim Actions can occur throughout the process

Figure 6
FY97 Status of Formerly Used Defense Site Properties





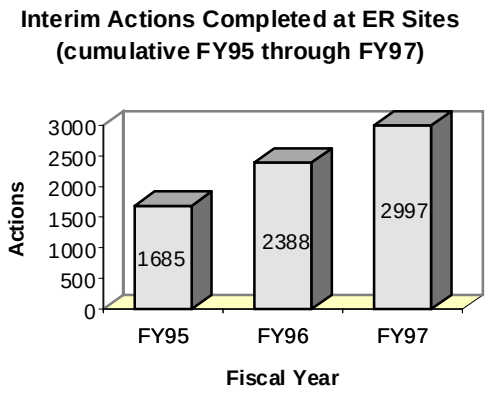
Phase Level

Phase Activities at Formerly Used Defense Sites

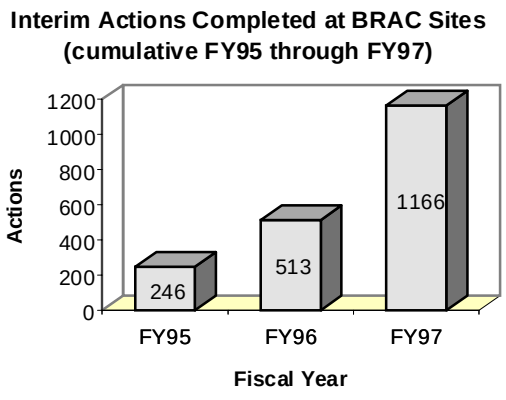
Phase	Completed	Under Way	Future
	Sites (# of Actions)		
Investigation	2,868	1,056	204
Interim Action**	113 (113)	44 (44)	
Design	858	289	1,349
RA-C	767	447	1,480
RA-O	0	22	210
LTM	5	34	239

* RIP is a subset of Sites in Progress
** Interim Actions can occur throughout the process

Figure 7



609 Interim Actions were completed at operational installations and FUDS properties in FY97

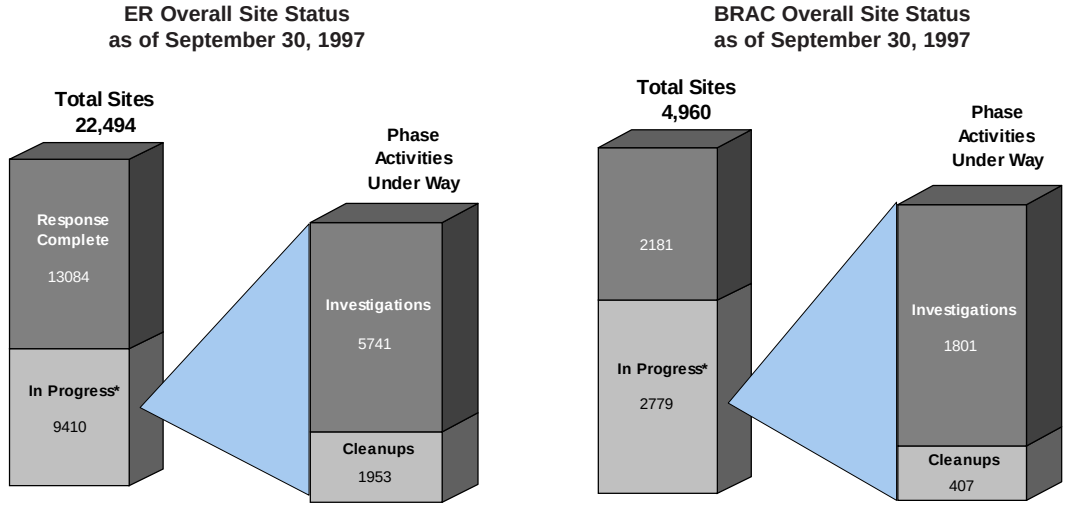


653 Interim Actions were completed at BRAC installations in FY97

Sites in Progress

Ongoing cleanup activities are measured according to the number of sites in progress, including sites in the investigation, design, Remedial Action Construction, and Remedial Action Operations (RA-O) phases. There are now 9,410 sites in progress at 10,711 operational DoD installations and FUDS properties and 2,779 sites in progress at 205 BRAC installations (see Figure 8).

Figure 8

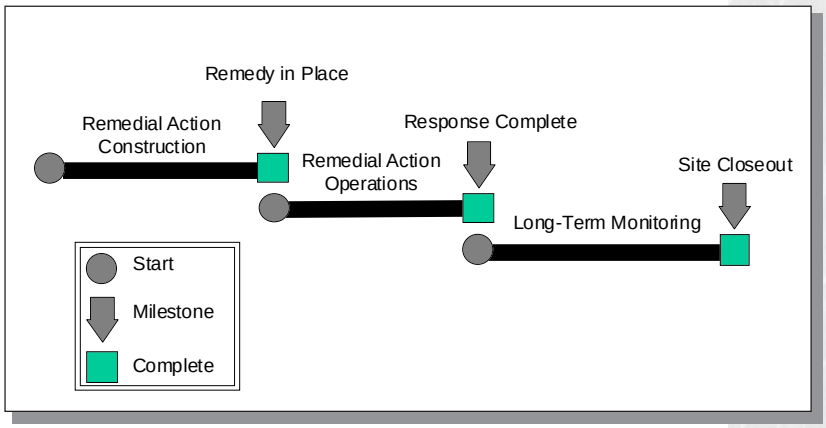


* In-progress includes sites that will be under way in the future. Therefore, totals of sites with phase activities under way are generally less than the total number of sites in progress.

Remedies in Place

The number of sites with Remedies in Place is a useful milestone for measuring DoD's progress toward Response Complete and ultimately Site Closeout. Of 27,454 sites at DoD operational installations, FUDS properties, and BRAC installations, 580 sites have Remedies in Place. A site is deemed to have a Remedy in Place when the Remedial Action is constructed, as shown in Figure 9.

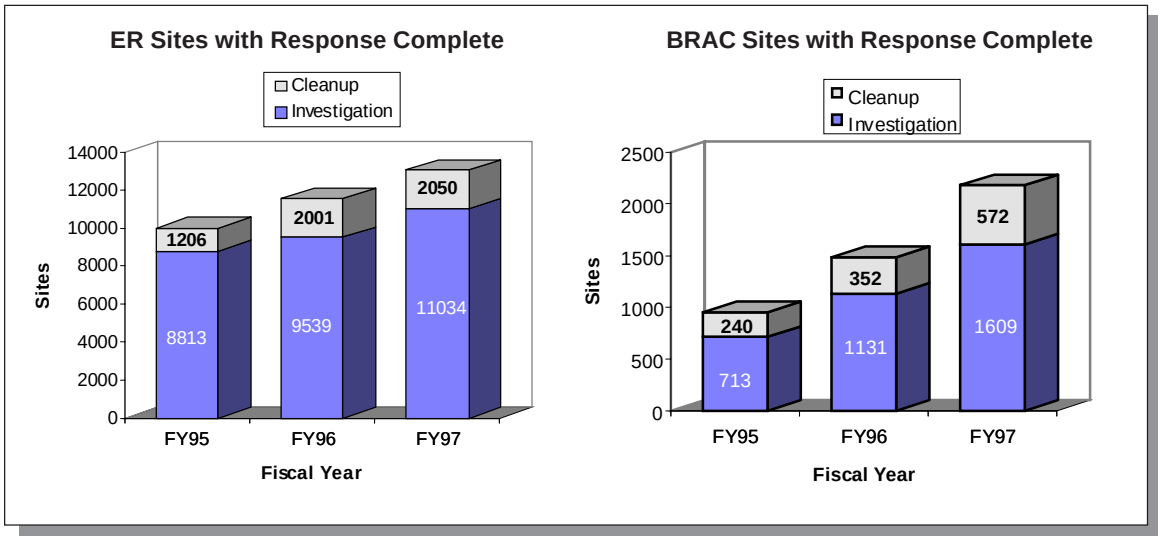
Figure 9
Milestones



Response Complete

The final milestone is the number of sites in the Response Complete category. Of 18,366 DoD operational sites, 62.4 percent are categorized as Response Complete. Of 4,960 BRAC sites, 44 percent are categorized as Response Complete. Overall, more than half of the DoD sites in the restoration program are in the final stages of the cleanup process. Figure 9 shows the milestones in the cleanup phase. A site is counted as Response Complete after the remedy is in place and RA-O has been completed (see Figure 10). Sites can also be Response Complete if a Remedial Action is not required after investigation. In fact, most sites are determined to be Response Complete as a result of investigation. If a site requires further monitoring after the response is complete, the site may proceed to the LTM phase before eventual Site Closeout.

Figure 10

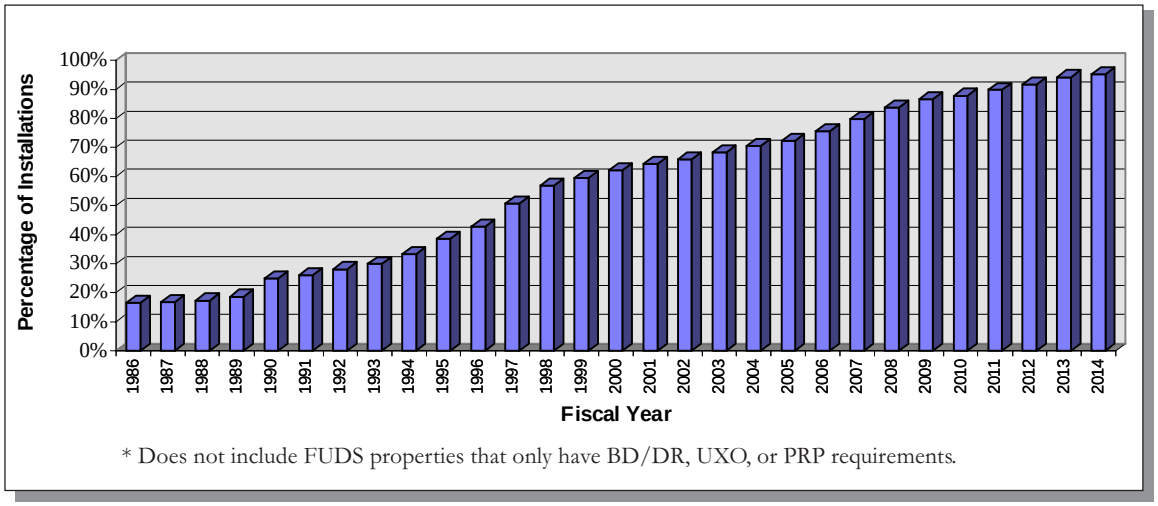


MOM 4: Remedies in Place or Response Complete

MOM 4 presents a broader picture of DoD's cleanup progress. Where MOM 3 looks at site milestones, MOM 4 measures the RIP or RC status of entire DoD operational and BRAC installations and FUDS properties. When the last contaminated site at an installation attains either RIP or RC, the entire installation or property is considered to be RIP or RC.

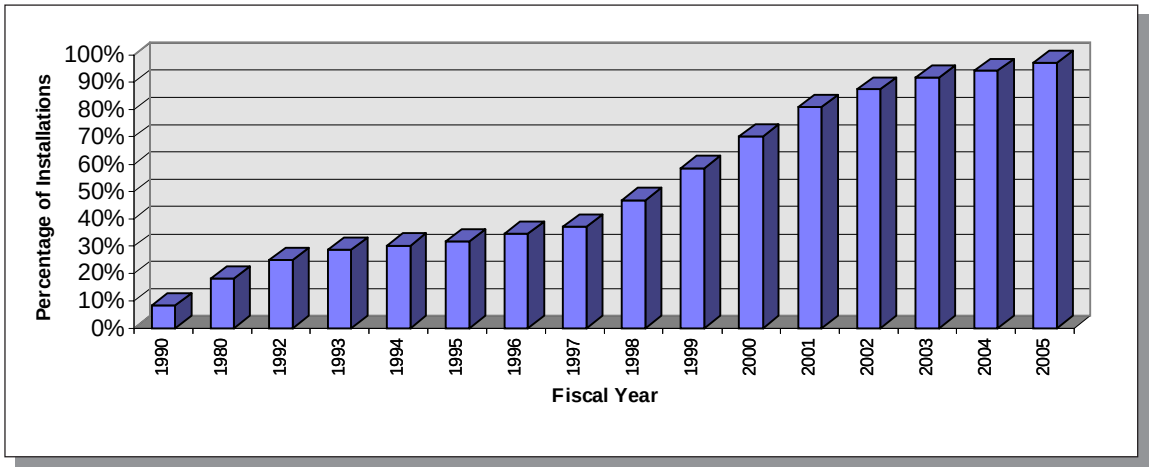
Figures 11a and 11b show the progress that DoD's cleanup program has made through FY97, as well as projections of when DoD expects installations to reach the RIP or RC stage of cleanup. Figure 11a shows accomplishments and projections for operational installations and FUDS properties; Figure 11b shows BRAC installation status.

Figure 11a
Operational Installations and FUDS Properties*
Achieving Final RIP or RC (cumulative from 1986 through 2014)



* Does not include FUDS properties that only have BD/DR, UXO, or PRP requirements.

Figure 11b
BRAC Installations Achieving Final RIP or RC
(cumulative from 1990 through 2005)



Cleanup Program in Action

The Air Force Academy

The Air Force Academy is well known for turning out accomplished young officers and, more often than not, a winning football team. What most people don't know about this elite institution is that it has just completed its final cleanup actions in FY97. Only long-term monitoring activities remain.

Because the Academy is a school rather than a major operations base, its restoration program is small (only 13 sites). After several years of environmental studies and minor cleanup activities, the Academy undertook construction of two landfill caps. A full complement of Academy resources was assembled to plan, program, and execute the project. Craftsmen from the civil engineering shops set up utilities for the operation; heavy equipment operators helped by moving 30,000 cubic yards of topsoil and compost; and natural resource experts assisted with the construction of erosion control measures while reseeding with native grasses to protect the sensitive habitat of a proposed endangered species. The Academy's focus on minimizing the cost of the landfill caps while expediting the work provided the results the Academy aimed for.

Constant communication, close working relationships, and a team approach were critical to the success of the cleanup program at the Academy. As a result, the cleanup program is categorized as Response Complete and visitors to the Academy can now observe a herd of elk grazing atop the caps that seal the former landfill.

Program Funding

The DERP's funding process, status, and progress are presented in this section. There is a direct correlation between funding and execution from one fiscal year to another. Dramatic decreases in program funding may increase costs by reducing efficiency over the long term. DoD's aim is to achieve stable funding from year to year to meet the needs of the Environmental Restoration Program now as well as 5, 10, and even 20 years into the future.

The Budget Process

Funding for cleanup is limited, and specific restoration activities must be assessed early if they are to receive appropriate funding. Funding for cleanup is influenced by many factors, including changing priorities in the cleanup process, identification of new sites, and, in some cases, changes in national security policy and priorities. Other issues considered in determining the sequence in which sites will be addressed are the statutory and regulatory status of a particular installation or site (e.g., whether it is on the NPL); stakeholder concerns; program execution considerations, such as remedy selection; and economic factors. These elements are combined with the relative risk information to determine the actual funding priority for a site. DoD works with other federal agencies and stakeholders, including state regulators and restoration advisory boards (RAB) and other community entities, to determine priorities.

To accommodate these various considerations, the budgeting for the DERP requires flexible planning. At the same time, the planning must be rigorous and consistent over time to meet the requirements of the DoD budget process. This process consists of four interrelated phases: planning, programming, budget development and execution. These phases are shown in Figure 12.

Cleanup Program in Action

The Army's Installation Action Plan (IAP) Workshops*

During 1997, the Army hosted 12 workshops in nine states to enhance its partnering efforts with EPA, state regulators, and RAB community members. At each workshop, the participants reviewed the action plan of a different installation. Such plans involve relative risk rankings for every site undergoing cleanup, current cleanup activities, proposed future actions, and estimated funding requirements.

The process used in these workshops enables the decision makers to evaluate every cleanup project on an installation, including future activities. The Army in turn gains valuable insights and learns opinions on the work plan from the regulators and RAB community co-chairs, all of whom are very knowledgeable about cleanup activities for the installation. Samuel Johnson, community co-chair for the Fort Carson RAB, said, "This several-day meeting, during which every SWMU [solid waste management unit] at Fort Carson was discussed in detail, gave me ample opportunity both to observe the risk assessment and prioritization processes and to give candid advice based on my sense of the community's interests and perceptions."

As partners, the participants prioritize projects and come to consensus on what should be funded first on the basis of the installation's fiscal year budget. All participants understand that an installation's budgetary constraints often prevent the funding of all requirements during a single fiscal year. In addition, all participants are aware that every action must be in compliance with state and EPA regulations and must adhere to DoD policies and guidance.

State participants can use the information developed at a workshop to prepare their resource estimates for future DoD cleanup activities, as stated in the Defense and State Memorandum of Agreement (DSMOA) grant application. Under the DSMOA program, states and territories are reimbursed by DoD for services they provide in support of DoD restoration activities. A state regulator for the California Department of Toxic Substances Control said, "The IAP partnering workshop was an important process for building on the trust and cooperative working relationship of the existing project team."

These workshops offer an ideal forum for building rapport, opening lines of communication, and developing trust among those involved in the cleanup at an installation. Bringing stakeholders together early in the cleanup process results in faster and more efficient environmental cleanups, a goal that everyone shares.

*Army IAPs are equivalent to Management Action Plans.

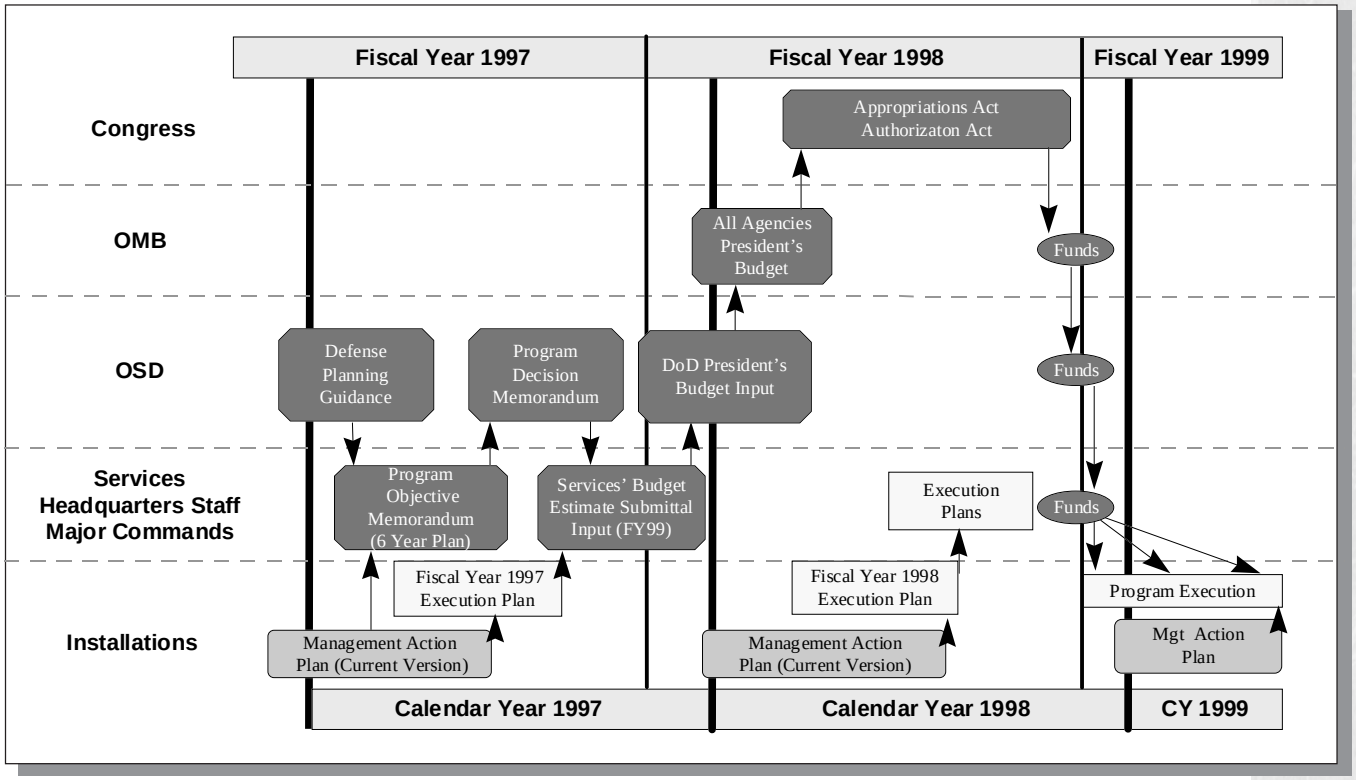
The Planning Phase

DoD develops and provides program goals and guidance on how to achieve the goals. Based on the goals and guidance, each installation develops site-level requirements for accomplishing these goals in its Management Action Plan (MAP). These requirements are officially updated at least once each year to take into account changes in priorities, policies, legislation, performance measures, and availability of funding; the requirements can change significantly over time.

The Programming Phase

Components use the requirements identified in their respective MAPs to prepare Program Objective Memorandums (POM), which are long-range plans covering a 6-year time frame. POMs are reviewed by OSD in an annual program review process, and any program decisions, if necessary, are issued to establish guidance on preparing the budget.

Figure 12
Cleanup Budget Process



Budget Development and Execution

The Military Departments and Defense Agencies develop and submit budget estimates to OSD for review and approval. Any questions or concerns are resolved through a strenuous budget review process conducted over a 2- to 3-month period. The DoD budget is then submitted to the Office of Management and Budget (OMB) for further review and approval before being forwarded to the President for signature. The President's budget is submitted to Congress early in the following calendar year (CY). The time frame associated with the development of the budget encompasses many years. For instance, the first FY99 budget was submitted to Congress in early CY97 as part of the FY98–FY99 budget submission. An amended (updated) FY99 budget was submitted to Congress in early CY98. The requirements for restoration in each of the FY99 budget submissions were identified and updated in installation MAPs from 1995 through 1997. The best opportunity for stakeholder involvement and input occurs at the beginning of the programming and budgeting process when programs are first identified in the MAP. Stakeholders have opportunities to participate in Relative Risk Site Evaluations and in development of updates to the MAP. These are the points at which the requirements at each installation are evaluated and decisions on sequencing are made.

DERP Funding

As of September 30, 1997, DoD's Environmental Restoration Program investment exceeded $16 billion (see Figure 13). In FY97 alone, Congress appropriated $338.5 million for ER, Army; $287.1 million for ER, Navy; $391.6 million for ER, Air Force; $255.9 million for ER, FUDS; and $38.0 million, for ER, Defense-Wide. Congress now appropriates funding specifically for each of these five programs. In addition, the FY97 BRAC environmental funding investment was $671.7 million. Figures 14 and 15 present post-devolvement funding profiles for ER installations and FUDS and for BRAC installations, respectively.

Figure 13
DERP Funding History

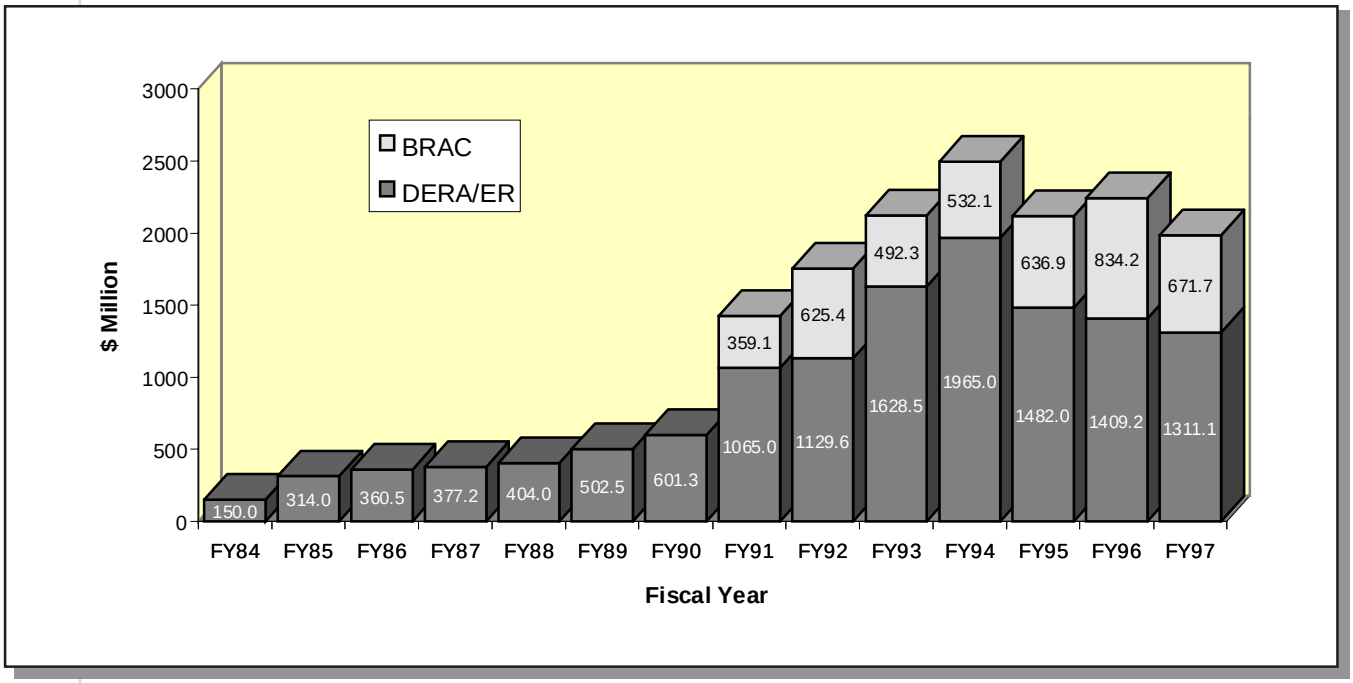


Figure 14
Environmental Restoration Funding Profile for OSD and Components (in millions of dollars)

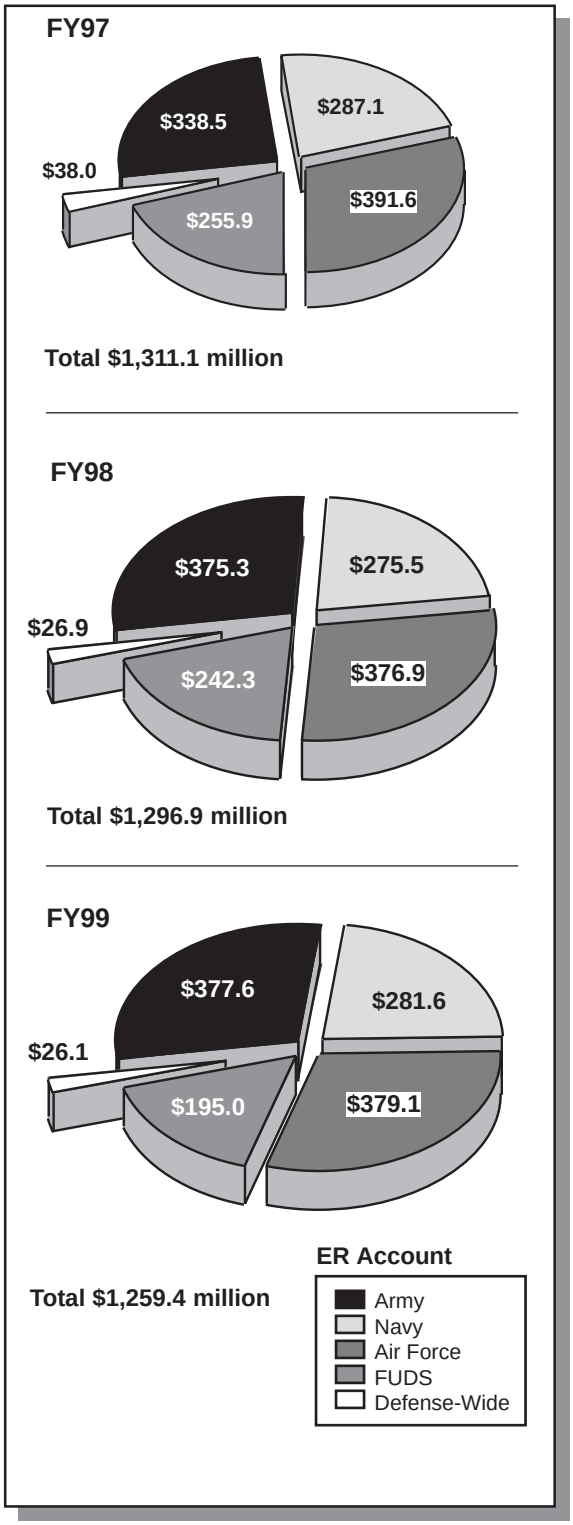
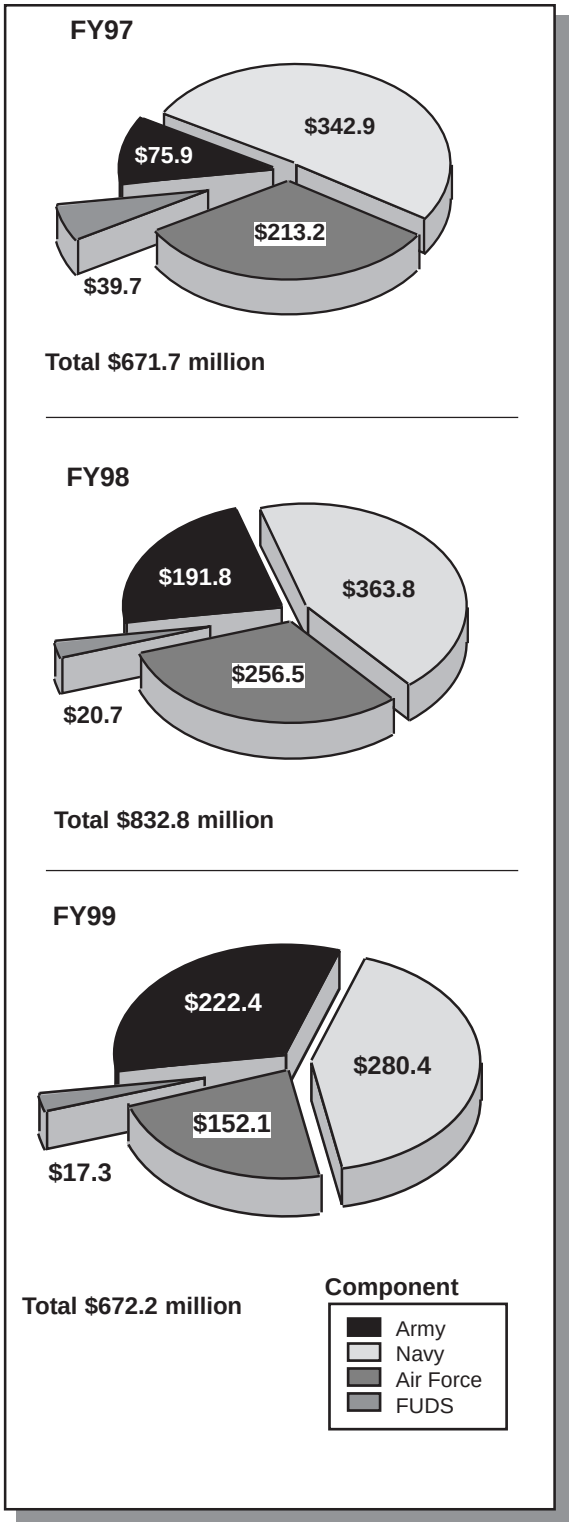


Figure 15
BRAC Environmental Funding Profile for Components (in millions of dollars)



ER Status

Since FY95, funding has been relatively stable, enabling DoD to more efficiently plan needed funding for the environmental cleanup program. Figure 16 illustrates the DERA/ER funding trend from 1984 to the present and projects funding to the year 1999.

The DERA/ER funding distribution profile in Figure 17 shows actual program obligations for program support (management and work

Figure 16
DERA/ER Funding Trend

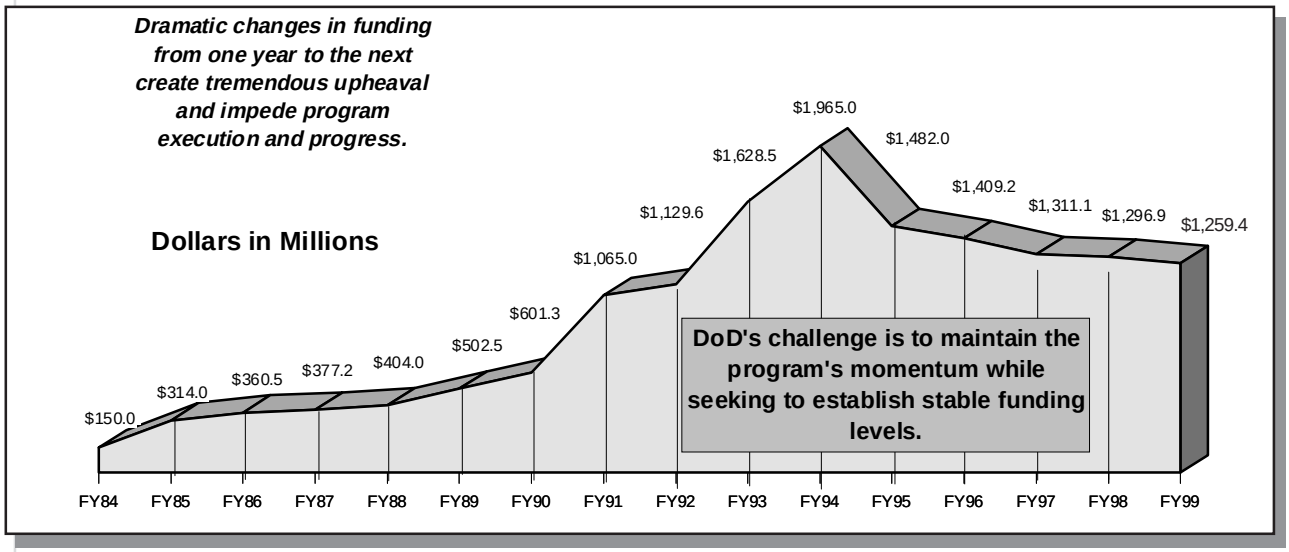
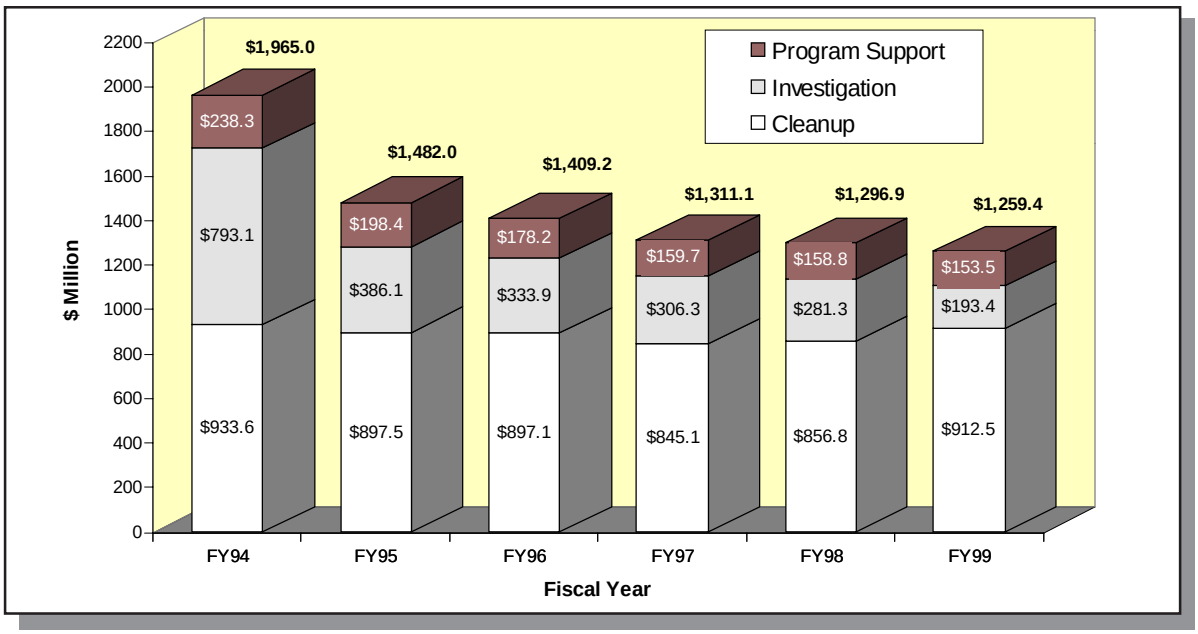


Figure 17
DERA/ER Funding Profile



years), investigation, and cleanup for FY94, FY95, FY96, and FY97 and planned obligations for these categories in FY98 and FY99. DoD has an established strategy and a systematic process in place for identifying, measuring, and continuously improving performance for the Environmental Restoration Program. By focusing on reducing risk and on setting priorities for appropriate investigation and cleanup work (in accordance with risk reduction and Site Closeout goals), DoD directs its goals and investment strategy toward completing the overall program in accordance with statutory requirements.

Balancing Funding

The FY96 National Defense Authorization Act (NDAA) required DoD to demonstrate its progress toward the goal of spending at least 80 percent of ER funding on cleanup and no more than 20 percent on program support, studies, and investigations by the end of FY97. Table 4 shows DoD's progress toward meeting this goal as the Environmental Restoration Program matures.

Table 4
Cleanup and Other Program Obligations and Planning Estimates for Fiscal Years 1993 through 1997

	Millions of Funding Dollars Obligated (% of Total Obligated Funds)				
Category	FY93	FY94	FY95	FY96	FY97
Studies & Investigations	761 (47)	793 (40)	386 (26)	334 (24)	306 (23)
Program Support	247 (15)	238 (12)	198 (13)	178 (13)	160 (12)
Total Non-Cleanup Funds	1,008 (62)	1,031 (52)	584 (39)	512 (36)	466 (35)
Cleanup	631 (38)	934 (48)	898 (61)	897 (64)	845 (65)
TOTAL DERA/ER FUNDING	**$1,629**	**$1,965**	**$1,482**	**$1,409**	**$1,311**

Notes: This table and the accompanying discussion satisfy the reporting requirement specified in Section 323(b) of the FY96 National Defense Authorization Act regarding DoD's goal of limiting DERA expenditures for program support, studies, and investigations.

Obligation categories are listed in accordance with the language in Section 323(a) of the FY96 National Defense Authorization Act.

Program support includes costs for management and work years. Management costs consist of program administration expenses, such as travel, training, and other support. The management cost category also includes Agency for Toxic Substances and Disease Registry and Defense and State Memorandum of Agreement funding. Work years costs are the costs incurred for DoD program management.

Investigation includes Preliminary Assessment, Site Inspection, and Remedial Investigation/Feasibility Study costs.

Cleanup includes Interim Actions, Remedial Design, Remedial Action Construction, Remedial Action Operations, and Long-Term Monitoring costs.

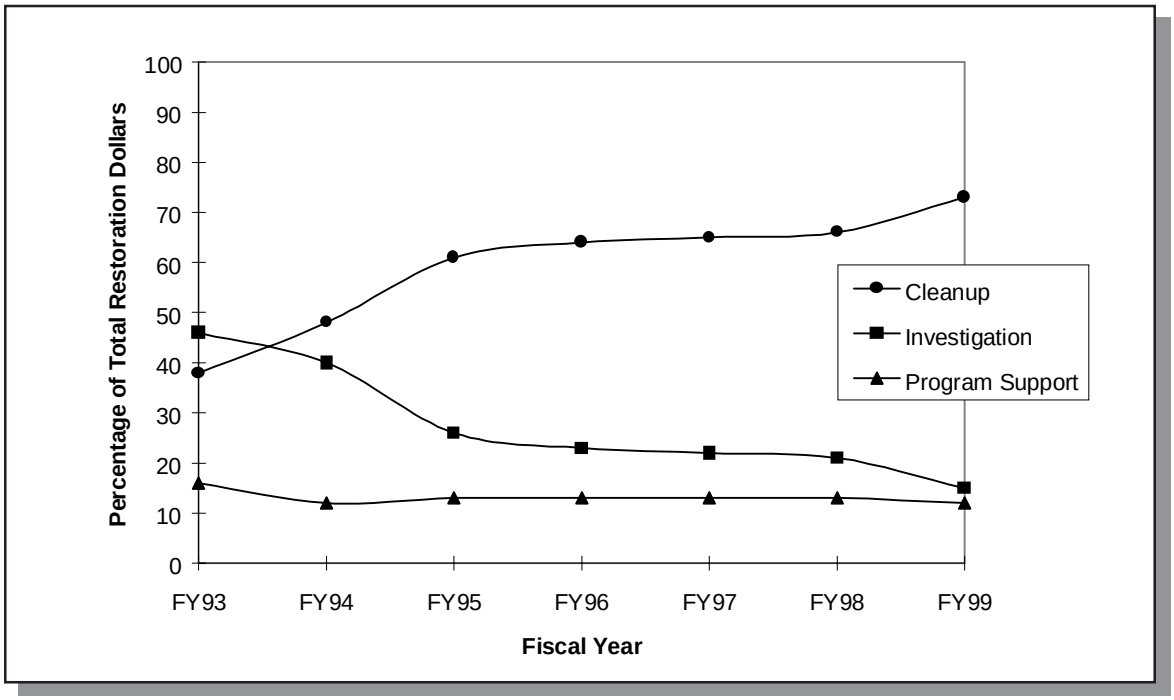
Thorough investigation and studies at some sites show that expensive cleanup remedies are usually unnecessary. As shown in the installation story on page 29, significant cost savings can result from careful analysis.

Figure 18 shows the funding allocation trends associated with the maturing of the Environmental Restoration Program. As the cleanup program has progressed, a larger percentage of funding has gone toward cleaning up DoD installations and a smaller amount has been spent on site investigations. Program support costs remain relatively low.

BRAC Status

The funding for the BRAC environmental program is part of the overall BRAC account and supports more than environmental restoration efforts. Congress has approved four BRAC rounds to date—BRAC 1988, BRAC 1991, BRAC 1993, and BRAC 1995. With each BRAC round adding new installations to the program, it has been necessary to increase BRAC funding over the years. The BRAC environmental funding profile shown in Figure 19 reflects environmental funding allocations from FY93 through FY97, and projected funding for FY98 and FY99, by BRAC round.

Figure 18
Portion of Funding Used for Cleanup, Investigation, and Program Support



Cleanup Program in Action

Defense Distribution Center New Cumberland Site

The 851-acre Defense Distribution Center (DDC) New Cumberland Site (formerly called Defense Distribution Region East) has been in operation for over 80 years, primarily as a major supply depot. Much of the site's need for environmental cleanup is attributable to Army aircraft maintenance activities that took place there between 1960 and 1984.

Recently, DDC New Cumberland Site has been implementing a dynamic cleanup program whose core philosophy involves fast-tracking projects, using the most effective environmental technologies, and fostering close working relationships with stakeholders. In less than 2 years, contaminated portions of the facility's 20-acre Transport Control Area were characterized, a remedial approach was developed, regulatory approval was obtained, the remediation contract was awarded, and the cleanup was completed (May 1997).

To address groundwater contamination at the Aircraft Maintenance Shop Area, the DDC used state-of-the-art groundwater modeling techniques. By comparing groundwater pump-and-treat alternatives with natural attenuation, the installation determined that natural attenuation would be equally protective of human health and the environment. The DDC will save more than $10 million over the life of the program by implementing this alternative remedy.

By employing area-specific standards for cleanup, under the Pennsylvania Land Recycling and Environmental Remediation Standards Act, the installation transformed a 300,000-cubic-yard contaminated wood disposal area at the facility into a protected natural area. This approach enabled DDC New Cumberland Site to reduce remediation costs by approximately $300,000 while extending a nature preserve that borders Marsh Run and the Pennsylvania Turnpike. It is estimated that by the year 2000, DDC's environmental cleanup program will consist solely of operation and maintenance of the implemented remediation systems.

Figure 19
BRAC Environmental Budget Funding Profile